

REMARKS

This paper is responsive to the Office Action mailed June 25, 2009, the August 20, 2009 telephonic Interview with Examiner G. Nagesh Rao, and the August 26, 2009 Examiner Interview Summary. Upon entry of the present Amendment, claims 6 and 8 will have been amended. The amendment of claim 6 involves provision of clear antecedent basis for the various cleaning steps and is supported in the context of the claim as well as in paragraphs 0027 to 0032 and Figs. 2-4. The amendment of claim 8 is supported, for example, by paragraphs 0010 to 0011. Applicants note no new matter has been added. Thus, upon entry of this Amendment, claims 6, 8, 10, 13-15 and 19-20 are under consideration by the Examiner, of which claim 6 is independent. The amendments to claims 6 and 8 provide clear antecedent basis for claim terms, and clarifies the contact angle in claim 8 as requested by the Examiner. The amendments were approved by the Examiner during the August 20, 2009 telephonic interview with Applicants' attorney Barry I. Hollander, they reduce the issues, and do not necessitate additional searching. Entry of the amendment is respectfully requested.

The Telephonic Interview

Examiner G. Nagesh Rao is thanked for the courtesy of an August 20, 2009 telephonic interview with applicants' attorney, Barry I. Hollander, regarding the amendments to claims 6 and 8 and the rejections. The substance of the interview is discussed herein and is also presented in the following remarks in response to the June 25, 2009 Final Office Action, and the August 26, 2009 Examiner Interview Summary.

During the telephonic interview, the Examiner agreed that the amendments to claims 6 and 8 were acceptable and would overcome the rejection of claim 8 under 35 U.S.C. 112, second paragraph as being indefinite regarding the contact angle. During the interview, it was argued that the references do not teach or suggest the claimed invention, and even if the references were properly combinable, the claimed invention would not be obtained where the top surface is made hydrophilic and the back surface is made water repellant. It was pointed out to the Examiner during the interview that Dietze et al shows SC-1 cleaning and SC-2 cleaning but does not clean with HF or BHF and ozone water to obtain a hydrophilic top surface and water repellant back surface. It was further asserted that Brabant et al dips the wafer in a solution and therefore does not wash the top surface and back surface with different solutions simultaneously to obtain a hydrophilic top surface and a water repellant back surface.

The Examiner alleged that it was known in the art to wash only the top surface with SC-1 to create a hydrophilic top surface, and to wash only the back surface with SC-2 to create a water repellant surface. However, it was pointed out to the Examiner that in the claimed invention SC-1 and SC-2 are used to clean the top surface and the back surface, and then the hydrophilic top surface is obtained by hydrophilicating cleaning, while the water repellant back surface is obtained by hydrophobicating cleaning.

The Examiner agreed to allow the application if Applicants filed an Amendment After Final Rejection with amendments to claims 6 and 8 as presented herein to clarify the claims and presented arguments as above.

Claim Rejections

35 U.S.C. § 112

The Office Action rejects claim 8 under 35 U.S.C. § 112, second paragraph as being indefinite in that it is not clear what the contact angle of the surface refers. This rejection is respectfully traversed.

Applicants note that claims 6 and 8 have been amended to further clarify the subject matter of the claims. Claim 8 now clearly recites a contact angle of the hydrophilic surface and the top surface is 20° or smaller and a contact angle of the water repellent surface and the back surface is 30° or greater. As agreed to by the Examiner during the August 20, 2009 interview, claim 8 as amended clearly recites which surfaces the contact angle refers to, and the rejection should be withdrawn.

Reconsideration and withdrawal of the rejection is respectfully requested.

Art Based Rejections

The Office Action rejects claims 6, and 13-14 under 35 U.S.C. § 103(a) as being unpatentable over Dietze et al (U.S. Patent No. 6,454,852) in view of Brabant et al (U.S. Patent Pub. 2003/0036268), in further view of Tanaka et al (U.S. Patent No. 6,239,045). This rejection is respectfully traversed.

As discussed with the Examiner during the August 20, 2009 telephonic interview the references do not teach or suggest the claimed invention, and even if the references were properly combinable, the claimed invention would not be obtained where the top

surface is made hydrophilic and the back surface is made water repellant. The Examiner has pointed out that Dietze et al discloses SC-1 cleaning and SC-2 cleaning, but does not use HF/BHF and ozone water for cleaning in order to make the top surface hydrophilic and the back surface hydrophobic. Brabant et al discloses immersing the wafer in a solution. However, as discussed during the interview, neither Dietze et al nor Brabant et al taken alone or in combination perform cleaning of the top and back surfaces simultaneously using different solutions, in order to make the top surface hydrophilic and the back surface hydrophobic.

During the August 20, 2009 interview the Examiner argued that it is known art to clean only the top surface using an SC-1 liquid, to make the top surface hydrophilic, and to clean only the back surface using an SC-2 liquid to make the back surface hydrophobic. However, as argued during the interview, in the present invention, SC-1 and SC-2 clean the top and back surfaces, and the hydrophobic cleaning is performed to make the back surface hydrophobic while the hydrophilic cleaning is performed to make the top surface hydrophilic at the same time.

Even if Tanaka et al describes the use of an HF cleaning solution and ozone water, Tanaka et al does not suggest the combination of an HF cleaning solution, ozone, and water with SC-1 cleaning and SC-2 cleaning. Tanaka et al does not describe obtaining of hydrophobic and hydrophilic surfaces as claimed.

Further, even if properly combinable, the combination of the three references, would lead to use of the immersion tank as disclosed in Brabant et al where only one

dipping bath is employed, and does not lead to the use of HF or BHF and ozone water for cleaning to make the top surface hydrophilic and the back surface hydrophobic.

As agreed to by the Examiner during the interview, the rejection is not tenable, and reconsideration and withdrawal thereof is respectfully requested.

The Office Action rejects claims 10, 15, and 19-20 under 35 U.S.C. § 103(a) as being unpatentable over Dietze et al (U.S. Patent No. 6,454,852) in view of Brabant et al (U.S. Patent Pub. 2003/0036268), in further view of Tanaka et al (U.S. Patent No. 6,239,045) in further view of Sato (U.S. Patent No. 6,942,737). This rejection is respectfully traversed.

The Dietze et al, Brabant et al and Tanaka et al references are relied upon by the Examiner as above. Sato is relied upon as disclosing the use of a sponge brush in conjunction with a water solution in order to provide for a more efficient cleansing means. The Office Action maintains that it would be obvious to one having ordinary skill in the art to employ the technique disclosed in Sato with that of the hypothetical combination of Dietze et al, Brabant et al and Tanaka et al to employ for a more effective and efficient cleansing means of the substrate in fast and predictable manner. However, Sato does not cure the above-described deficiencies in the teachings of Dietze et al Brabant et al and Tanaka et al and even if all of the references were properly combinable, applicants' claimed invention would not be obtained where SC-1 and SC-2 cleaning are

employed in combination with HF or BHF and ozone water to obtain a hydrophilic top surface and water repellant back surface.

Reconsideration and withdrawal of the rejection is respectfully requested.

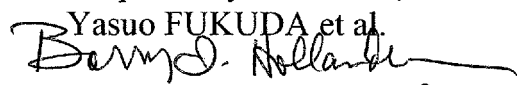
CONCLUSION

For at least the foregoing reasons, it is respectfully submitted that all pending claims are patentably distinct over the documents employed in the rejection of record. Applicants request reconsideration and withdrawal of the rejections of record. Allowance of the application with an early mailing date of the Notices of Allowance and Allowability is therefore respectfully requested.

If there should be any questions, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully Submitted,

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